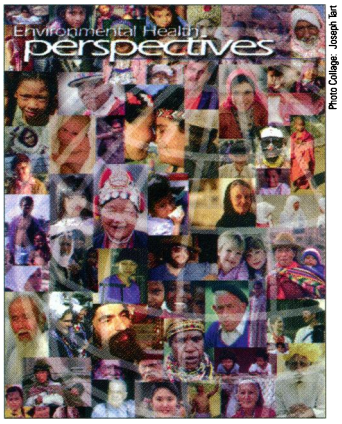
Editorial

Education: A First Step in Solving the Planet's Pollution Problems



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Pollution of the planet, practically speaking, begins and ends with people. Pollution is produced not only by the industrialized nations, but also by developing countries rushing toward progress and its rewards. In fact, some of the worst environmental problems begin in developing countries and then may affect their neighbors and even distant nations. Regardless of how well one country may deal with its own sources of pollution, environmental problems may remain until a neighbor institutes effective cleanup procedures as well. Professional diplomats, as well as others, often must deal with the question, How do I get my neighbor to do unto me as I have done for myself?

Toxic chemicals used for agricultural purposes wash into rivers that may cross national boundaries. The poisoning of aquifers may affect more than one nation. Atmospheric pollutants such as sulfur dioxide may be carried halfway around the world before descending in rain water to pollute lakes and kill trees. Depletion of the ozone layer by hydrofluorocarbons is an international problem of immediate concern. Volatile chemicals such as benzene hexachloride may be carried from warmer to colder regions of the world through a process called global distillation (*1*). Clearly, pollution is an international problem and needs to be addressed from an international perspective.

The earth can absorb the environmental impact of humans to a degree, but not indefinitely. We may have reached a limit where changes begin to influence climate and destruction of the environment could become permanent. With the lifting of the Iron Curtain, enormous degradation has been revealed in Russia and other former Soviet bloc countries. Exploitation of natural resources has occurred without regard for the environment or for the people whose lives were affected by the development of those resources. Slovakia, Poland, the Czech Republic, and Russia will take many years to recover from the pollution of rivers and lakes. In Poland, poor air quality, contaminated drinking water, and absence of treatment of industrial and municipal wastes are of major concern. As much as 30% of the effluent is discharged directly into the rivers and eventually into the sea.

In Brazil, gold mining has resulted in massive contamination of the environment with mercury, which is used in extraction of gold, especially around the Serra Pelada mine in the state of Pará. The burning of mercury-gold amalgam to release the bound gold releases mercury fumes, which then injure workers and settle on vegetation, where it is eventually washed by rain into the soil and into rivers. Studies of reservoirs downstream of gold mining demonstrate mercury contamination of soil, water, and fish.

China is a rapidly developing country with over 1.2 billion people. Environmental problems have arisen from overpopulation and rapid industrialization and overuse of natural resources. Air pollution is a major problem. Much of China's surface water is contaminated with heavy metals including lead, cadmium, and arsenic from industrial pollution.

The cover of this month's *EHP* and the first Focus article (p. 1092) focus on the people of the world and their role in both degrading and protecting the environment. The world's population in the next 50 years may exceed 9 billion, while the global economic output is estimated to increase possibly by about 5-fold (*2*). Clearly, renewable resources in the future may become severely strained or depleted. Destruction of the environment leads to cultural and economic impoverishment (*2*) and as environmental problems become more severe, they may trigger civil and international strife (*3*). It is extremely important that we begin to address the issues. Somehow we have to build a future that is sustainable, that does not destroy the environment.

A hope for the permanent resolution of pollution problems around the world lies in the education of its people. Pollution occurs because of the activities of people, and those activities may continue until those who engage in polluting the environment fully understand the consequences of their actions. Government legislation and policing is necessary, but information and education can influence the choices that people make.

Quite often those who are in greatest need of education are those that can least afford to invest. Because of this lack of discretionary funds, especially U.S. currency, NIEHS offers subscriptions to *EHP*, free of charge, to any educational or research institution in any developing nation. Our only condition is that the journal reside in a library and be freely available to all who have need of its information. In this way, we at NIEHS try to contribute to and influence environmental health programs around the world. At the present time we provide over 2,000 subscriptions to developing nations. Of these, 249 subscriptions are sent to Russia, 102 to Poland, 9 to Slovakia, 65 to the Czech Republic, 174 to China, and 73 to Brazil. I consider this program an investment in the future of humanity.

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